

Applicant has cancelled claim 9 and amended claims 1, 5-7 and 10 and have added dependent claims 12 and 13. Applicant respectfully submits that as amended, the within application is in condition for allowance.

Rejections under 35 U.S.C. § 112

Claims 1-11 were rejected under 35 U.S.C. § 112, second paragraph, in particular claims 1-5, 7, 8 and 9. Applicant has amended claims 1 and 7 by removing the objectionable language. Accordingly, the Examiner is requested to withdraw the outstanding rejection as applied to claims 1-11.

Rejections under 35 U.S.C. § 102:

Claims 1-5 were rejected under 35 U.S.C. § 102(b) as being anticipated by Lazzara. Claims 7 and 8 were rejected under 35 U.S.C. § 102(e) as being anticipated by Grande et al. U.S. Patent No. 6,068,478. To anticipate a claim, the reference must teach each and every element as set forth in the claim. M.P.E.P. § 2131; See Verdegaal Bros. V. Union Oil Co., 814 F.2d 628, 631, 2 U.S.P.Q.2d (BNA) 1051, 1053 (Fed. Cir. 1987). In this instance, Lazzara does not teach and or suggest each and every limitation of the independent claims as amended and thus cannot be considered to anticipate the present invention.

The invention as recited in independent claim 1 is characterized by a dental prosthesis which includes a dental implant, an implant abutment having an endless O-ring groove formed about the outer axial surface and an appliance having a retainer cavity including a retainer surface, there being a complimentary groove in said retainer surface shaped to closely match and receive said outer portion of the O-ring. See independent claims 1. The dental prosthesis described in the claims has a novel complimentary groove in said retainer surface shaped to closely match and receive said outer portion of the O-ring that projects from the axial surface of

the implant abutment. This provides for a resilient retentive fit between the prosthesis and the implant abutment. Further, said design facilitates easy removal for hygienic and maintenance purposes as the prosthesis is easily removed for cleaning yet resilient enough to survive multiple removals and still maintain its effectiveness. The dental implant appliance mounting recited in the independent claims is patently different from the alignment corrector for dental implant disclosed by Lazzara.

Lazzara discloses an alignment corrector for a dental implant, which is axially misaligned relative to a desired axis and has a base member and a corrector member providing a receiver to support a prosthesis. However, Lazzara does not disclose a dental prosthesis, and in particular the prosthesis, implant and implant abutment as recited in the independent claims.

The Examiner has indicated that:

Lazzara discloses dental prosthesis abutment 46 (variations shown 47) affixed at a lower end to a dental implant 10, abutment having an implant abutment axis and O-ring 118, O-ring shown having a cross-sectional diameter substantially greater than the depth of the groove such that outer portion of the O-ring projects from abutment surface; and an appliance 114 having a retainer cavity in retainer surface matching abutment surface, a complimentary groove in retainer surface shaped to closely match and receive outer portion as seen in Fig 9 (column 5, line 63).

See Office Action, pp. 3, ¶6. The claim elements numerically identified in the Lazzara disclosure are illustrated in the figures. Claim element 46 is depicted in Figs. 1 and 6; claim element 47 is depicted in Figs. 6, 7, 8, 9, 10 and 11; claim element 10 is depicted in Figs. 1-3; claim element 118 is depicted in Fig. 9; and claim element 114 is depicted in Fig. 9. Fig. 1 illustrates two dental implants which are installed in the jawbone; Fig. 6 shows the retention stud 47 embedded in the cast body within the gum; Fig. 7 depicts a post with an axial bore 92 opening centrally through a recess; Figs. 8 and 9 depict a “Zest” and an “Oso” anchor, respectively; and Figs. 10 and 11 depict an abutment post. See Lazzara, col. 5, ll. 55 – col. 6, ll. 29.

Claim element 46 is defined by the Lazzara patent as "a receiving member" and claim element 47 as "a retention stud" which is secured within the jawbone. Lazzara, col. 3, ll. 63-65; col. 5, ll. 47-49. Both the receiving member 46 and the retention stud 47 serve as anchors and are affixed to form a single component that provides for a correction angle between the base of the alignment corrector and the receiving member. The device disclosed by Lazzara requires that both claim elements (46 & 47) be used to receive an abutment post to which the prosthesis will be fitted. See Lazzara, Fig. 1. In contrast, the present invention requires that the tapered implant abutment with a groove is used to receive the prosthesis, not to secure the implant abutment into the dental implant placed within the jawbone.

Further, Figures 8 and 9 of the Lazzara reference are illustrative of alternative embodiments of an anchor which is used to secure the implant abutment within the gum, not to secure the prosthesis to the implant abutment as recited in independent claim 1. The receiving socket member 114 fits over the groove 116 and forms an anchor post, which is adapted to receive and retain a stud 106 to which the implant abutment is added prior to the prosthesis being cemented. See Lazzara col. 5, ll. 55-63; Figs. 8 & 9.

Figs. 10 and 11 do not teach or suggest the invention as disclosed by the independent claims of the within application. Figs. 10 and 11 illustrate abutment posts with a coping 122 which envelops the tapered portion of the post. Once assembled the abutment post can then receive the cemented prosthesis. See Lazzara, Fig. 11; col. 6, ll. 22-23.

The device disclosed by the Lazzara reference does not include an implant abutment with an inwardly tapered surface of the platform of the male coupling with a groove for an O-ring and a complimentary groove in said retainer surface of the appliance. Such a device is not disclosed by Lazzara as seen in Fig. 11. The device disclosed is Lazzara is so distinct from the dental

prosthesis revealed in independent claim 1 that it could not have anticipated the claimed invention.

Similarly, Grande discloses an impression system for an end of an implant projecting from a human tissue structure that is patentably distinct from the invention recited in the amended claim 7. Grande does not disclose an implant abutment with "a circumferential groove in said implant abutment extending substantially transverse to said axis" as recited in amended claim 7. Support for this amendment may be found in the Specification, for example at p. 4, ¶3. Thus, an O-ring coupling member that is inserted between the circumferential groove of the implant abutment and the appliance provides retention for the appliance. Grande does not disclose the invention, as recited in the amended independent claim 7 and thus cannot anticipate the invention.

Therefore, Applicant respectfully submits that claim 1 and amended claim 7 are patentable over the cited reference for at least these reasons. Accordingly, dependent claims 3-6 and claims 8-11 which depend therefrom are also in condition for allowance.

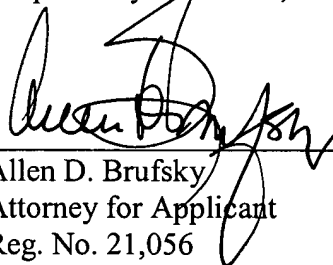
Rejections under 35 U.S.C. § 103:

Claim 6 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Lazzara in view of Beaty. Claims 9-11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Grande in view of Lazzara. A prima facie case establishing obviousness requires that (1) there must be some suggestions or instructions to modify the references or to combine the teachings; (2) a reasonable expectation of success and (3) the prior art references must teach or suggest all the claim limitations. See MPEP §2143. In this instance, the references do not teach or suggest all the claim limitations as combined.

Lazzara discloses an alignment corrector for dental implants whereas Beaty discloses a dental restoration or artificial root fixtures. Neither Lazzara nor Beaty disclose the invention as recited in independent claim 1 from which claim 6 depends and which is characterized by a dental prosthesis having an implant abutment with an endless O-ring groove formed about the outer axial surface and an appliance having a retainer cavity including a retainer surface, there being a complimentary groove in said retainer surface shaped to closely match and receive said outer portion of the O-ring. Since neither Lazzara nor Beaty teach or suggest all the claim limitations as combined then a prima facie case of obviousness cannot be established. Therefore, the cited references cannot render the present invention obvious. Thus, claim 6 which depends from independent claim 1 is therefore patentable over the cited art.

Similarly, in combination the references of Lazzara and Grande do not disclose all the claim limitations recited in independent claim 7. Neither Lazzara nor Grande disclose a dental prosthesis, and thus could not disclose the prosthesis recited in claim of which includes a circumferential groove in said implant instrument extending substantially transverse to said axis. Thus claims 9-11 which depend from independent claim 7 are therefore patentable over the cited art.

Respectfully submitted,

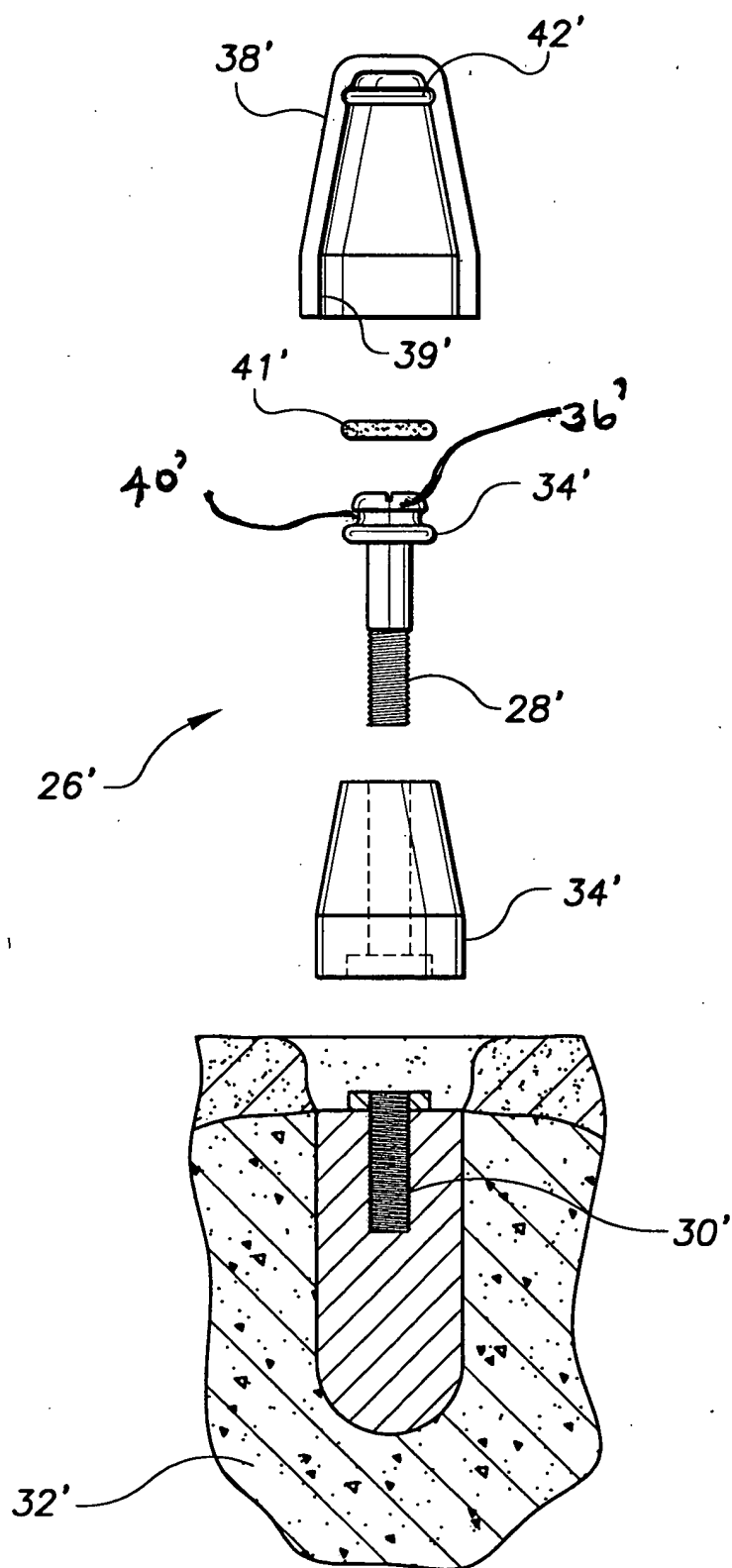


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FIG. 2



APPENDIX A

In the Specification:

At page 4, ¶ 3:

This inwardly tapered surface of the platform 34 of the male coupling means serves to directly support the appliance 38 by frictional engagement with the interior surface of the downwardly extending tapered skirt portion 39 of the dental appliance above and below a retention device, such as an O-ring 41 removably secured to the overdenture or female half 38 of the coupling. The O-ring 41 [inserted] is inserted in a groove 40 circumferentially formed in the female half of the coupling and a corresponding circumferential groove 42 in the appliance (e.g., a cap or overdenture) or female half of the coupling 38.

At page 4, ¶ 4:

In FIG. 2, an implant abutment attachment is generally indicated at 26', and has a metal shaft 28' which is threaded through the implant abutment attachment 26' and [] received in a threaded bore 30' formed in a dental implant 32'. An inwardly tapered surface on the exterior of platform 34' is carried on top of shaft 28' which frictionally mates with and supports the downwardly tapering skirt 39' on the female half 38' of a coupling means or dental appliance. As with the overdenture attachment in FIG. 1, a gingival cuff of variable height is provided. As in the overdenture of FIG. 1, the implant abutment attachment 26' has an inward taper extending upwardly to guide and support the cap or dental appliance or female half of the coupling 38' into a coupling relationship. Again, the retention for the appliance is provided by an O-ring coupling member 41' inserted between a circumferential groove 40'[] formed on top of metal shaft 28' and a retentive undercut or circumferential groove 42' in the cap or appliance 38'.

In the Claims:

1. (Amended) An improved dental [prostheses] prosthesis comprising:
 - an implant abutment affixed at a lower end to a dental implant,
 - said implant abutment having an implant abutment axis;
 - a groove in said implant abutment extending substantially transverse to said axis
 - and O-ring of elastomeric material stretched about said implant abutment and elastically retained in said groove, said O-ring having a cross-sectional diameter substantially greater than the depth of said groove such that an outer portion of said O-ring projects from [said] an outer axial surface of said implant abutment [surface]; and
 - an appliance having a retainer cavity including a retainer surface closely telescopically [matable] mateable onto said axial implant abutment surface, there being a complementary groove in said retainer surface shaped to closely match and receive said outer portion of the O-ring, said O-ring thus making a resilient retentive fit between said prosthesis and said implant abutment.
5. (Amended) The prosthesis of claim 4 wherein said appliance is formed from metal[, either] and processed into a denture. [, partial denture, a splinted bar.]
6. (Amended) The prosthesis of claim 5 wherein said appliance [ids formrd] is formed from porcelain fused to metal.
7. (Amended) An implant dental prosthesis comprising:
 - an implant abutment affixed at a lower end to a dental implant,
 - said implant abutment having an implant abutment axis;
 - a circumferential groove in said implant abutment extending substantially transverse to said axis; and

an appliance having a hollow retainer cavity with an outwardly and downwardly taper relative to said implant abutment axis forming a retainer surface telescopically mateable on [and] an upwardly and inwardly extending facing a mating tapered surface on said axial implant abutment making a resilient retentive fit between said mating tapered surfaces.

10. The prosthesis of claim [9] 7 where said retentive element is a plane generally transverse to the axis of said implant abutment.